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10/550,646	06/28/2006	Francoise Andolfatto	FR-AM 1945 NP	4530
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TRAN, BINH X				
ART UNIT		PAPER NUMBER		
1792				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

carol.hill@arkema.com
steven.boyd@arkema.com
thomas.roland@arkema.com

Office Action Summary

Application No.

10/550,646

Applicant(s)

ANDOLFATTO ET AL.

Examiner

Binh X. Tran

Art Unit

1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 December 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 21-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 24 is/are allowed.
- 6) ☒ Claim(s) 1-11, 13, 21 and 23 is/are rejected.
- 7) ☒ Claim(s) 12 and 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB06)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
3. Claims 1-4, 7-11, 13, 21, 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heffer (US 3,850,668) in view of LaBarge et al. (US 2004/0077494 A1) and Sharma et al. (US 2007/0184208 A1).

Respect to claim 1, Heffer discloses a process for the formation of a coating of metal oxides comprising at least one precious metal from Group VIII (i.e. ruthenium) of the Periodic Table of the elements, on an electrically conductive substrate; the said process comprising:

applying, to the said substrate, a solution comprising at least one organometallic compound (i.e. ruthenium acetylacetonate) and then converting the said at least one organometallic compound to at least one metal oxide by means of a heat treatment; the said process is characterized in that the sole solution applied to the said substrate is a non-aqueous solution of one or more metal acetylacetonates dissolved in a one or more solvents which specifically dissolve said one or more metal acetylacetonates, the one or more solvents being chloromethanes (i.e. chloroform) and mixtures of two or more thereof (See col. 1-col. 3).

Heffer fails to disclose the substrate is made of steel or iron. However, Heffer clearly disclose the substrate is porous and comprise carbon (col. 1 lines 25-40). LaBarge discloses the use porous substrate include stainless steel or carbide material (paragraph 0012). It would have been obvious to one having ordinary skill in the art, at the time of invention, to modify Heffer in view of LaBarge by using steel substrate because equivalent and substitution of one for the other would produce an expected result.

Heffer and LaBarge fail to disclose that at least one precious metal from Group VIII of the periodic Table of the elements in combination with titanium, zirconium or mixture thereof. However, Heffer clearly teaches to use precious metal from Group VIII. Sharma teaches to use precious metal precursor mixture include metal from Group VIII and zirconium in order to provide a wide range of suitable metallic compounds as well as a flexibility in choice of metal blends and alloy composition (paragraph 0063-0064). It would have been obvious to one having ordinary skill in the art, at the time of

invention, to modify Heffer and LaBarge in view of Sharma by using metal mixture comprises zirconium because it provides a wide range of suitable metallic compounds as well as a flexibility in choice of metal blends and alloy composition.

Respect to claims 2-4, Heffer discloses the precious metal is ruthenium (abstract, col. 2 lines 15-30). Respect to claims 7-8, Heffer discloses the solvent is chloroform and the metal acetylacetonate solution is obtained by dissolution of the metal acetylacetonate in one solvent (i.e. chloroform) (See col. 2 lines 15-30, lines 51-52).

Respect to claim 9, Heffer discloses the solution of ruthenium acetylacetonate is obtained by dissolution of ruthenium acetylacetonate in a mixture of one solvent (i.e. chloroform; See col. 2 lines 20-30, lines 50-55). Respect to claim 10, Heffer discloses the substrate is pretreated in the first stage (col. 1 lines 25-29, col. 2 lines 43-50) in the first stage, then in a second stage the solution comprise metal acetylacetonate is deposited on the pre-treated substrate and the substrate is dried and then calcimined (See col. 2 line 56 to col. 3 line 5).

Respect to claim 11, Heffer discloses the drying is carried out at a temperature of 100 °C (col. 2 lines 56-60, read on "up to 150 °C"). Respect to claim 13 and 23, Heffer discloses the second stage is repeated more than once (col. 3 lines 4-7).

Respect to claim 21, Sharma teaches to use several metal acetylacetonates obtained by mixing solution comprising metal acetylacetonate (paragraph 0063-0064).

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heffer, LaBarge and Sharma as applied to claims 1-4, 7-11, 13, 21, 23 above, and further in view of Hunt et al. (US 6,132,653).

Respect to claim 5, Heffer, LaBarge and Sharma fail to disclose the solvent is alcohol selected from ethanol and isopropanol. However, Heffer clearly discloses to use ruthenium acetylacetonate with an organic solvent. Hunt teaches to use solvent includes ethanol, isopropanol to dissolve metal acetylacetonate compound (col. 17 lines 45 to col. 18 line 15). It would have been obvious to one having ordinary skill in the art, at the time of invention, to modify Heffer, LaBarge and Sharma in view of Hunt by using ethanol or isopropanol because it helps to aid the solubility of a polar solute. Further, these solvent are low cost solvent.

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heffer, LaBarge and Sharma as applied to claims 1-4, 7-11, 13, 21, 23 above, and further in view of Iwasawa et al. (US 5,864,051).

Respect to claim 6, Heffer, LaBarge and Sharma fail to disclose the solvent is acetone. However, Heffer clearly discloses to use ruthenium acetylacetonate with an organic solvent. Iwasawa teaches to use metal previous metal acetylacetonate compound including ruthenium acetylacetonate or platinum acetylacetonate that is dissolved in acetone solvent (col. 2 lines 1145-62). It would have been obvious to one having ordinary skill in the art, at the time of invention, to modify Heffer, LaBarge and Sharma in view of Iwasawa by using acetone as a solvent because equivalent and substitution of one for the other would produce an expected result.

Allowable Subject Matter

6. Claims 12, 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
7. Claim 24 is allowed.
8. The following is a statement of reasons for the indication of allowable subject matter: The reasons for allowance were discussed in previous office action.

Response to Arguments

9. In response to applicant's argument that "the carbon or graphite substrate required by Heffer '668 is a much more expensive material than the iron or steel substrate of the present invention", the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). LaBarge clearly discloses that porous substrate includes stainless steel or carbide material (paragraph 0012). The examiner still maintains that it would have been obvious to one having ordinary skill in the art, at the time of invention, to modify Heffer in view of LaBarge by using steel substrate because equivalent and substitution of one for the other would produce an expected result.

The applicants further state "Heffer '668 fails to disclose the use of titanium and/or zirconium in combination with ruthenium." Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

The prior art Sharma et al. (US 2007/0184208) teaches the use of zirconium in combination with ruthenium (paragraph 0063-0064).

The applicants further state that "LaBarge et al. '494 fails to disclose the iron or steel: substrate of the present invention. The stainless steel disclosed by LaBarge et al. '494 is not the same substrate material as the iron or steel substrate of the present invention". The examiner strongly disagrees. LaBarge clearly teaches to use a stainless steel substrate (read on applicant's limitation "substrate made of steel or of iron"). There is no limitation in the claim which excludes the present of stainless steel.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Regarding to claim 6, the applicants state 'there is no disclosure in Hunt et al. '653 of a process for the formation of a coating of metal oxides comprising at least one precious metal from Group VIII of the Periodic Table of the elements in combination with titanium and/or Zirconium, on an electrically conductive substrate made of steel or of, iron as set forth in the present invention". The examiner disagrees. The examiner uses Hunt for the teaching of using solvent includes ethanol, isopropanol to dissolve metal acetylacetonate compound. The examiner does not use Hunt for the teaching of metal precious metal from Group VIII in combination with titanium, zirconium or mixture thereof. Sharma teaches to use precious metal precursor mixture include metal from

Group VIII and zirconium in order to provide a wide range of suitable metallic compounds as well as a flexibility in choice of metal blends and alloy composition (paragraph 0063-0064).

The applicants further state "Sharma et al. '208 fails to disclose a process for formation of coating of metal oxides comprising at least one precious metal from Group VIII of the Periodic Table of the elements in combination with titanium and/or zirconium on an electrically conductive substrate made of steel or iron as set forth in the present invention. Applicants submit that a combination of Heffer '668, LaBarge et al. '494 and Sharma et al. '208, if obvious, fails to render obvious the present invention and the rejection should be withdrawn". The examiner strongly disagrees. Heffer clearly teaches the process of forming a metal oxide comprising at least one previous metal from Group VII of the Periodic Tables of the element on the carbon substrate. LaBarge discloses the substrate can be made of carbide or steel. Sharma teaches to use precious metal precursor mixture include metal from Group VIII and zirconium in order to provide a wide range of suitable metallic compounds as well as a flexibility in choice of metal blends and alloy composition (paragraph 0063-0064). The examiner maintains that the combination of Heffer, LaBarge and Sharma is obvious for the reason as set forth above.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Binh X. Tran whose telephone number is (571)272-1469. The examiner can normally be reached on Monday-Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on (571) 272-1465. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Binh X Tran
Primary Examiner
Art Unit 1792

/Binh X Tran/
Primary Examiner, Art Unit 1792